



BLUE ROCK
ENVIRONMENTAL, INC.

FILE COPY

Ms. Kasey Ashley
NCRWQCB
5550 Skylane Boulevard, Suite A
Santa Rosa, California 95403

January 28, 2005

**Re: Monitoring Well Installation and First Quarter
2005 Groundwater Monitoring Report
Former Beaver Lumber Company
1220 Fifth Street, Arcata, CA
Case No. 1NHU001
Blue Rock Project No. NC-1**

Dear Ms. Ashley,

This report presents the results of the monitoring well installation and first quarter 2005 groundwater monitoring activities at 1220 Fifth Street, Arcata, Humboldt County, California (site) (Figure 1), and was prepared for Mr. Bradford C. Floyd by Blue Rock Environmental, Inc. (Blue Rock).

Background

Site Description

The site is located at the western end of Fifth Street, between State Highway 255 and the railroad tracks, in the town of Arcata, California (Figure 1). The site consists of a metal framed building surrounded by asphalt pavement and gravel surfacing (Figure 2). The site is surrounded by industrial, commercial, agricultural, and residential properties. Prior to the construction of the waste transfer station and truck scale, the site was paved with asphalt and used as a log deck for the former adjacent saw mill.

Site History

In September 1998, approximately 1,200 cubic yards of sand and gravel fill material and 3,500 cubic yards of silty clay soil were excavated from the site to facilitate the construction of a waste transfer station. Kern Construction Company (Kernen) removed site soils from ground surface to 4 feet below ground surface (bgs) in the two excavation locations shown in Figure 2. Engineered fill was then placed in these locations to meet building code requirements. The excavated soil was stockpiled on asphalt near the excavation. The soils were scheduled to be hauled to Cummings Road Landfill in Eureka, California to be used as cover soil.

On September 9, 1998, trucks containing site soils were turned away from the Cummings Road Landfill because the site supervisor observed that the soil appeared dark and had an oily smell.

The soil was then hauled to Kernen's construction facility in Glendale, California for temporary storage.

In a September 16, 1998 letter, the City Garbage Company of Eureka informed the Humboldt County Division of Environmental Health (HCDEH) that soils from the site were refused and appeared to have an oily smell.

On September 22, 1998, Kernen collected four soil samples from the soil stockpile. These samples (1, 2, 3, and 4) were analyzed for total petroleum hydrocarbons as diesel (TPHd) and sample 3 was also analyzed for hydrocarbon oil and grease (O&G). Low levels of TPHd and O&G were detected in these samples (Table 1). These laboratory results were forwarded to the HCDEH.

On October 6, 1998, the Humboldt Solid Waste Management Authority (HCWMA), which was leasing the site, and the HCDEH had a meeting to discuss the disposition of the soil stockpiled at Kernen's facility.

In a letter dated October 9, 1998, the HCDEH informed the HCWMA of options for handling the soils.

On October 13, 1998, Winzler and Kelly collected six soil samples (5, 6, 7, 8, 9, and 10) from the stockpiled soil for disposal profiling (Tables 1 and 2).

In December 1998, the NCRWQCB authorized the HCWMA to bioremediate site soils on an asphalt paved portion of the Humboldt County Road Department lease property located on the eastern edge of the Arcata Airport.

In a letter dated July 5, 2000, the NCRWQCB sent a reminder request to the HCWMA for the necessary submittal a report of waste discharge and final disposal plan.

In a letter dated December 29, 2000, the NCRWQCB requested the property owner to prepare a workplan to determine the extent soil contamination and if groundwater has been impacted in reference to the locations of excavated soils.

On March 19, 2003, Clearwater Group (Clearwater) reviewed aerial photos of the site from 1996 and interviewed the site contractor that performed the soil excavation activities. Clearwater interpreted aerial photos from 1996 to indicate that the site was previously used as a log deck and storage of heavy equipment and machinery. The site contractor indicated that the site prior to construction contained scattered wood waste on top of asphalt surfacing and below the asphalt consisted of sand and gravel fill from below asphalt to approximately 1 foot bgs and gray silty clay from 1 foot bgs to total excavated depth of 4 feet bgs. Soil was excavated 5 feet beyond the footprint of the buildings shown in Figure 2.

Clearwater submitted a *Preliminary Site Investigation Workplan*, dated March 31, 2003, to the NCRWQCB. The workplan proposed to evaluate the extent of petroleum hydrocarbon contamination in subsurface soil and groundwater peripheral to the two "September 1998" soil excavation areas (Figure 2). The workplan proposed to complete the investigation through the installation of five shallow soil borings with the collection of grab groundwater samples. This workplan was approved by the NCRWQCB in a letter dated May 13, 2003.

On June 12, 2003, Clearwater supervised the advancement of five soil borings associated with the subject property: SB-1 through SB-5 (Figure 2). These soil borings were placed in locations to assess the sorbed-phase hydrocarbon contamination associated with the site. Grab groundwater samples were collected from each boring to evaluate dissolved-phase hydrocarbon contamination associated with the site. These borings were advanced to 15 feet bgs. Based on soil stockpile analytical results and area of excavation, Clearwater calculated that approximately 395 gallons of motor oil was removed from the site in 1998. Results of this investigation are presented in Clearwater's *Preliminary Site Investigation Report*, dated August 11, 2003. The NCRWQCB commented on this *Report* in a site correspondence letter dated August 28, 2003, requesting preparation of a *Workplan* to define the extent of contamination and requesting lower detection limits for TPHmo. Clearwater had the laboratory revise the laboratory report to reflect the requested detection limit for TPHmo in groundwater samples collected on June 12, 2003.

Clearwater submitted a *Workplan for Additional Investigation*, dated September 29, 2003, to the NCRWQCB. The *Workplan* proposed the installation of four groundwater monitoring wells proximal to soil boring SB-2 to evaluate hydrocarbon distribution and establish a groundwater gradient and flow direction. This *Workplan* was approved with comments by the NCRWQCB in a letter dated October 31, 2003.

Groundwater Monitoring Well Installation Activities

On January 10, 2005, Blue Rock supervised the installation of four monitoring wells associated with the subject site: MW-1 to MW-4 (Figure 2). These monitoring wells were placed in locations to assess the hydrocarbon contamination and establish a groundwater gradient associated with the site. These borings were advanced to 15 feet bgs.

Soil samples were collected from each boring during drilling activities at five foot intervals and at the capillary fringe for sedimentological assessment and possible laboratory analysis. All soil samples were screened in the field using an Organic Vapor Meter (OVM), and one to three soil samples were selected to be analyzed from each boring. All soil samples were then chilled and shipped to the project lab for determination of concentrations of TPHmo and TPHd by EPA Method 3550/8015B and BTEX by EPA Method 8260B by Kiff Analytical in Davis, California.

Monitoring wells were constructed in each borehole, in accordance with the approved *Workplan* (Table 5).

Soil cuttings and auger rinsate were retained in DOT rated 55-gallon steel drums for future removal and disposal.

Subsurface Investigation Results

Investigative activities indicate that the site is underlain predominantly by sediments characterized as gravel fill, silt, and silty sand to a depth of at least 15 feet bgs (see attached boring logs).

All soil samples were successfully sent under chain-of-custody to the project laboratory. Petroleum hydrocarbons were detected in soil samples collected from 5 to 15 feet bgs. TPHd ranged from <1 mg/kg (MW-2@10'&15', MW-3@5') to 6.7 mg/kg (MW-4@15'). TPHmo ranged from <1 mg/kg (MW-1@15', MW-2@5', 10'&15', MW-3@5', 10'&15', MW-4@10') to 24 mg/kg (MW-4@15'). No concentrations of BTEX were detected at depths and locations sampled.

Soil sample analytical results are listed in Table 1, and displayed in Figure 3. Kiff analytical reports are attached.

Groundwater Monitoring Field and Laboratory Activities

Groundwater Monitoring Well Development

On January 17, 2005, the four monitoring wells were developed by purging ten well casing volumes from each well.

Monitoring Well Survey

On January 17, 2005, all four monitoring wells were surveyed to an established benchmark above mean sea level. The established benchmark used to survey these wells is based on City of Arcata centerline monument located at the corner of 5th and J Street, in Arcata, California. The elevation of this monument is 13.64 feet above mean sea level.

Groundwater Monitoring Activities

On January 17, 2005, all four wells (MW-1 through MW-4) were gauged and sampled.

Prior to sampling, an electronic water level indicator was used to gauge depth to water in each well, accurate to within ± 0.01 -foot. All wells were checked for the presence of light non-aqueous phase liquid (LNAPL) petroleum prior to purging. No measurable thicknesses of LNAPL were observed on groundwater in any of the wells.

In preparation for sampling, the wells were purged of groundwater until sampling parameters (temperature, pH, and conductivity) stabilized.

Following recovery of water levels to at least 80% of their static levels in the other wells, groundwater samples were collected from the wells using disposable polyethylene bailers and transferred to laboratory supplied containers. Sample containers were labeled, documented on a chain-of-custody form, and placed on ice in a cooler for transport to the project laboratory.

Purging instruments were cleaned between use by an Alconox® wash followed by double rinse in clean tap water to prevent cross-contamination. Purge and rinse water was stored on-site in labeled 55-gallon drums pending future removal and disposal.

Groundwater monitoring and well purging information is presented on Gauge Data/Purge Calculations and Purge Data sheets (attached).

Groundwater Sample Analyses

Groundwater samples were analyzed by Kiff Analytical (Kiff), a DHS-certified laboratory, located in Davis, California, for the following analytes:

- TPHmo by EPA Method 8015M with silica gel cleanup.
- TPHd by EPA Method 8015M with silica gel cleanup.
- BTEX by EPA Method 8260B.

Groundwater Monitoring Results

Groundwater Flow Direction and Gradient

Static groundwater in the wells was present beneath the site at depths ranging from approximately 2.77 (MW-3) to 4.62 (MW-4) feet bgs. Gauging data, combined with well elevation data, were used to calculate groundwater elevation, and to generate a groundwater elevation and gradient map. The groundwater flow direction was calculated to be toward the south at a gradient of 0.0053 ft/ft (Figure 4).

Groundwater Contaminant Analytical Results

LNAPL:	None
TPHmo concentration:	<100 micrograms per liter (µg/L) (MW-3) to 430 µg/L (MW-4)
TPHd concentration:	<50 µg/L (MW-3) to 99 µg/L (MW-4)
Benzene concentration:	<0.50 µg/L (MW-1, MW-2, MW-3, and MW-4)

Groundwater sample analytical results are shown graphically on Figure 5, and groundwater sample analytical results are summarized in Table 4. Copies of the laboratory report and chain-of-custody form are attached.

Remarks

Groundwater sample analytical results for samples collected from monitoring well MW-1 are significantly lower than concentration detected in grab groundwater samples collected from soil boring SB-2 in June of 2003. The location of MW-1 is adjacent to SB-2. The dissolved-phase hydrocarbon concentrations detected below the site appear to be low and are limited to a small area. Assuming the 1998 excavation removed the majority of hydrocarbon source, it is likely these low dissolved-phase concentrations will naturally attenuate over time. Concentrations of TPHd are footnoted by the laboratory as non-typical of diesel and have a higher boiling point, suggesting that they are an overlap of TPHmo concentrations detected.

Project Status

- The site is currently being monitored on a monthly and quarterly basis per the NCRWQCB directives. Depth to water measurements will be collected monthly and groundwater gradient maps will be included in the next quarterly monitoring report. The next quarterly sampling event is scheduled for April 2005. Groundwater samples will be analyzed for TPHmo, TPHd, and BTEX.

Certification

This report was prepared under the supervision of a California Registered Geologist at Blue Rock. All statements, conclusions, and recommendations are based upon published results from past consultants, field observations by Blue Rock, and analyses performed by a state-certified laboratory as they relate to the time, location, and depth of points sampled by Blue Rock. Interpretation of data, including spatial distribution and temporal trends, are based on commonly used geologic and scientific principles. It is possible that interpretations, conclusions, and recommendations presented in this report may change, as additional data become available and/or regulations change.

Information and interpretation presented herein are for the sole use of the client and regulating agency. The information and interpretation contained in this document should not be relied upon by a third party.

The service performed by Blue Rock has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the area of the site. No other warranty, expressed or implied, is made.

If you have any questions regarding this project, please contact us at (707) 441-1934.

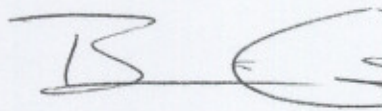
Sincerely,
Blue Rock Environmental, Inc.

Prepared by:



Scott Ferriman
Project Scientist

Reviewed by:



Brian Gwinn, PG
Principal Geologist



Attachments:

Table 1: Soil Sample Analytical Results
Table 2: Soil Stockpile Analytical Results
Table 3: Soil Stockpile Analytical Results (metals)
Table 4: Groundwater Elevations and Analytical Results
Table 5: Well Construction Details
Figure 1: Site Location Map
Figure 2: Site Plan
Figure 3: Sorbed-Phase Hydrocarbon Distribution
Figure 4: Groundwater Elevations and Gradient – 1/17/05
Figure 5: Dissolved-Phase Hydrocarbon Distribution
Soil Boring Logs and Well Completion Diagrams
Blue Rock's Gauge/Purge Calculations and Well Purging Data Field Sheets
Laboratory Analytical Reports and Chain-of-Custody Form

Distribution:

Mr. Jim Clark
Humboldt County Division of Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

Mr. Bradford C. Floyd
819 Seventh Street
Eureka, CA 95501

Table 1
SOIL SAMPLE ANALYTICAL RESULTS

Former Beaver Lumber Company

1220 Fifth Street

Arcata, California

Blue Rock Project # NC-1

Sample ID	Sample Depth (feet bgs)	Sample Date	TPHmo (mg/kg)	TPHd (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)
SB-1	5	6/12/03	<10	<1	<0.005	<0.005	<0.005	<0.005
	10	6/12/03	<10	<1	<0.005	<0.005	<0.005	<0.005
SB-2	10	6/12/03	49	<4	<0.005	<0.005	<0.005	<0.005
	15*	6/12/03	<10	<1	<0.005	<0.005	<0.005	<0.005
SB-3	7	6/12/03	<10	<1	<0.005	<0.005	<0.005	<0.005
	10	6/12/03	<10	<1	<0.005	<0.005	<0.005	<0.005
SB-4	7	6/12/03	<40	10	<0.005	<0.005	<0.005	<0.005
	10	6/12/03	<40	15	<0.005	<0.005	0.018	0.013
	15*	6/12/03	<10	<1	<0.005	<0.005	<0.005	<0.005
SB-5	7	6/12/03	<10	<1	<0.005	<0.005	<0.005	<0.005
	10	6/12/03	<40	<4	<0.005	<0.005	<0.005	<0.005
MW-1	15	1/10/05	<10	1.3	<0.005	<0.005	<0.005	<0.005
MW-2	5	1/10/05	<10	1.3	<0.005	<0.005	<0.005	<0.005
	10	1/10/05	<10	<1	<0.005	<0.005	<0.005	<0.005
	15	1/10/05	<10	<1	<0.005	<0.005	<0.005	<0.005
MW-3	5	1/10/05	<10	<1	<0.005	<0.005	<0.005	<0.005
	10	1/10/05	<10	1.3	<0.005	<0.005	<0.005	<0.005
	15	1/10/05	<10	1.1	<0.005	<0.005	<0.005	<0.005

Table 1
SOIL SAMPLE ANALYTICAL RESULTS
Former Beaver Lumber Company
1220 Fifth Street
Arcata, California
Blue Rock Project # NC-1

Sample ID	Sample Depth (feet bgs)	Sample Date	TPHmo (mg/kg)	TPHd (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)
MW-4	10	1/10/05	<10	1.2	<0.005	<0.005	<0.005	<0.005
	15	1/10/05	24	6.7	<0.005	<0.005	<0.005	<0.005

Notes

bgs: below ground surface

mg/kg = milligrams per kilogram=ppm=parts per million

<###: Not detected above the method detection limit as shown.

TPHmo: Total Petroleum Hydrocarbons as motor oil by EPA Method 3550/8015M

TPHd: Total Petroleum Hydrocarbons as diesel by EPA Method 3550/8015M

BTEX by EPA Method 8020 and 8260B

* : Samples analyzed 7 days past 14 day holding time for TPHmo and TPHd.

Table 2
SOIL STOCKPILE ANALYTICAL RESULTS
Former Beaver Lumber Company
1220 Fifth Street
Arcata, California
Blue Rock Project No. NC-1

Sample ID	Sample Description	Sample Date	O and G (mg/kg)	TPHmo (mg/kg)	TPHmo* (mg/kg)	TPHd (mg/kg)	TPHd* (mg/kg)	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)	PCP (mg/kg)	TCP (mg/kg)
1	sand, gravel, silty clay	9/22/98	--	--	--	<1	--	--	--	--	--	--	--	--	--
2	sand, gravel, silty clay	9/22/98	--	--	--	3.2	--	--	--	--	--	--	--	--	--
3	sand, gravel, silty clay	9/22/98	180	--	--	5.5	--	--	--	--	--	--	--	<1	<1
4	sand, gravel, silty clay	9/22/98	--	--	--	3.7	--	--	--	--	--	--	--	--	--
5	sand, gravel, silty clay	10/13/98	--	63	47	6.7	4.7	<1	<0.005	0.012	<0.005	<0.01	<0.05	<1	<1
6	sand, gravel, silty clay	10/13/98	--	110	71	16	12	<1	<0.005	0.025	<0.005	<0.01	<0.05	--	--
7	sand, gravel, clay, woodwaste	10/13/98	--	710	600	27	26	<1	<0.005	0.02	<0.005	<0.01	<0.05	<1	<1
8	sand, gravel, silty clay	10/13/98	--	--	--	--	--	--	--	--	--	--	--	--	--
9	sand, gravel, silty clay	10/13/98	--	53	50	5.2	4.6	<1	<0.005	0.0087	<0.005	<0.01	<0.05	<1	<1
10	silty clay	10/13/98	--	14	13	<1	<1	<1	<0.005	<0.005	<0.005	<0.01	<0.05	<1	<1

Notes

mg/kg = milligrams per kilogram=ppm=parts per million

<###: Not detected above the method detection limit as shown

O and G: Total hydrocarbon oil and grease by Standard Method 5520 EF

TPHmo: Total petroleum hydrocarbons as motor oil by EPA Method 3550/8015M

TPHmo*: Total petroleum hydrocarbons as motor oil with silica gel cleanup by EPA Method 3550/8015M

TPHd: Total petroleum hydrocarbons as diesel by EPA Method 3550/8015M

TPHd*: Total petroleum hydrocarbons as diesel with silica gel cleanup by EPA Method 3550/8015M

TPHg: Total petroleum hydrocarbons as gasoline by EPA Method 5030/8015M

Benzene, toluene, ethylbenzene, total xylenes by EPA Method 8020

MTBE: Methyl tertiary butyl ether by EPA 8020

PCP: Pentachlorophenol by pulp method

TCP: Tetrachlorophenol by Canadian Pulp Method

"--" Not analyzed, available or applicable

Table 3
SOIL STOCKPILE ANALYTICAL RESULTS (METALS)
Former Beaver Lumber Company
1220 Fifth Street
Arcata, California
Blue Rock Project No. NC-1

Sample ID	Sample Description	Sample Date	Sb (mg/kg)	As (mg/kg)	Ba (mg/kg)	Be (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Co (mg/kg)	Cu (mg/kg)	Pb (mg/kg)	Hg (mg/kg)	Mo (mg/kg)	Ni (mg/kg)	Se (mg/kg)	Ag (mg/kg)	Tl (mg/kg)	V (mg/kg)	Zn (mg/kg)
1	sand, gravel, silty clay	9/22/98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	sand, gravel, silty clay	9/22/98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	sand, gravel, silty clay	9/22/98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	sand, gravel, silty clay	9/22/98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	sand, gravel, silty clay	10/13/98	ND	ND	140	ND	ND	62	11	24	ND	ND	ND	66	ND	ND	ND	39	63
6	sand, gravel, silty clay	10/13/98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7	sand, gravel, clay, woodwaste	10/13/98	ND	ND	170	ND	ND	42	ND	25	ND	ND	ND	50	ND	ND	ND	35	54
8	sand, gravel, silty clay	10/13/98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9	sand, gravel, silty clay	10/13/98	ND	ND	120	ND	ND	57	11	22	ND	ND	ND	69	ND	ND	ND	37	65
10	silty clay	10/13/98	ND	ND	170	ND	ND	79	14	27	ND	ND	ND	92	ND	ND	ND	42	71

Notes

mg/kg = milligrams per kilogram=ppm=parts per million

ND: Not detected above the method detection limit

Sb: Antimony by EPA Method 7000 series

As: Arsenic by EPA Method 7000 series

Ba: Barium by EPA Method 7000 series

Be: Beryllium by EPA Method 7000 series

Cd: Cadmium by EPA Method 7000 series

Cr: Total Chromium by EPA Method 7000 series

Co: Cobalt by EPA Method 7000 series

Cu: Copper by EPA Method 7000 series

Pb: Lead by EPA Method 7000 series

Hg: Mercury by EPA Method 7000 series

Mo: Molybdenum by EPA Method 7000 series

Ni: Nickel by EPA Method 7000 series

Se: Selenium by EPA Method 7000 series

Ag: Silver by EPA Method 7000 series

Tl: Thallium by EPA Method 7000 series

V: Vanadium by EPA Method 7000 series

Zn: Zinc by EPA Method 7000 series

Table 4
GROUNDWATER ELEVATIONS AND
ANALYTICAL RESULTS

Former Beaver Lumber Company

1220 Fifth Street

Arcata, California

Blue Rock Project No. NC-1

Sample ID	Sampling Date	TOC (feet)	DTW (feet)	GWE (feet)	TPHmo (µg/L)	TPHd (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)
SB-1	6/12/03	--	--	--	<175	<50	<0.5	<0.5	<0.5	<1
SB-2	6/12/03	--	--	--	4,000	<200	<0.5	<0.5	<0.5	<1
SB-3	6/12/03	--	--	--	<175	<50	<0.5	<0.5	<0.5	<1
SB-4	6/12/03	--	--	--	<175	<50	<0.5	<0.5	<0.5	<1
SB-5	6/12/03	--	--	--	<175	<50	<0.5	<0.5	<0.5	<1
MW-1	1/17/05	13.22	4.03	9.19	280*	86*	<0.5	<0.5	<0.5	<0.5
MW-2	1/17/05	12.73	3.54	9.19	210*	60*	<0.5	<0.5	<0.5	<0.5
MW-3	1/17/05	12.17	2.77	9.40	<100*	<50*	<0.5	<0.5	<0.5	<0.5
MW-4	1/17/05	13.80	4.62	9.18	430*	99*	<0.5	<0.5	<0.5	<0.5
MCL					--	--	1	150	300	1,750
Taste & odor threshold					--	100	--	42	29	17
Cleanup Goals					175	100	0.5	42	29	17

Notes :

TOC: Top of casing referenced to feet above mean sea level (msl).

DTW: Depth to water as referenced to top of well casing.

GWE: Groundwater elevation as referenced to established benchmark.

TPHmo: Total Petroleum Hydrocarbons as motor oil by EPA Method 3510/8015M (* indicates silica gel cleanup).

TPHd: Total Petroleum Hydrocarbons as diesel by EPA Method 3510/8015M (* indicates silica gel cleanup).

BTEX: Benzene, toluene, ethylbenzene, and xylenes by EPA method 8020 and 8260B.

µg/L: micrograms per liter = ppb = parts per billion

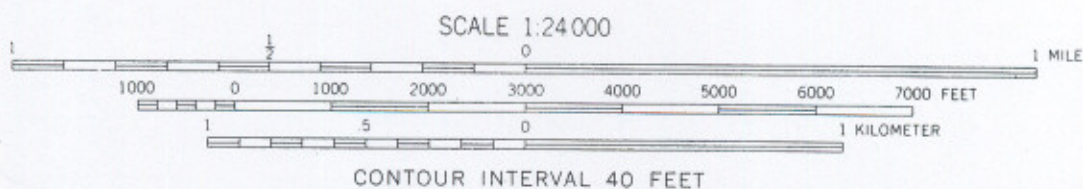
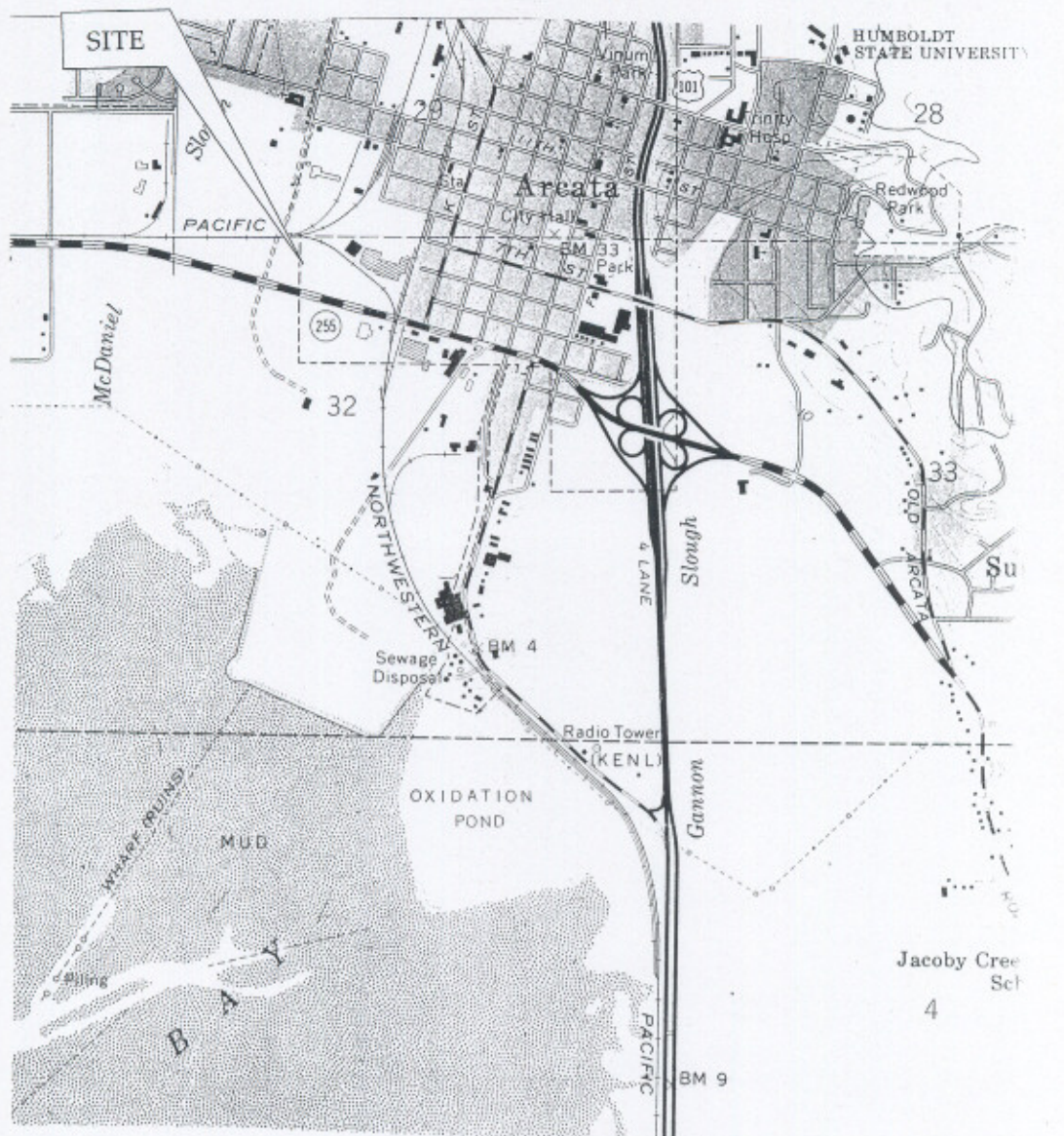
"--": Not analyzed, available, or applicable

MCL: Maximum contaminant level, a Federal drinking water standard based on health, technology and economics.

Taste & odor threshold: A drinking water standard

Table 5
WELL CONSTRUCTION DETAILS
Former Beaver Lumber Company
1220 Fifth Street
Arcata, California
Blue Rock Project No. NC-1

Well Identification	Date Installed	Installed by	Casing Diameter (inches)	Total Depth (feet)	Blank Interval (feet)	Screened Interval (feet)	Slot Size (inches)	Filter Pack (feet)	Bentonite Seal (feet)	Cement (feet)
MW-1	1/10/05	Blue Rock	2	15	0-3	3-15	0.01	2-15	1-2	0-1
MW-2	1/10/05	Blue Rock	2	15	0-3	3-15	0.01	2-15	1-2	0-1
MW-3	1/10/05	Blue Rock	2	15	0-3	3-15	0.01	2-15	1-2	0-1
MW-4	1/10/05	Blue Rock	2	15	0-3	3-15	0.01	2-15	1-2	0-1



MAP SOURCE: USGS Arcata South, CA
Quadrangle



Site Location Map

Former Beaver Lumber Company
1220 Fifth Street
Arcata, California

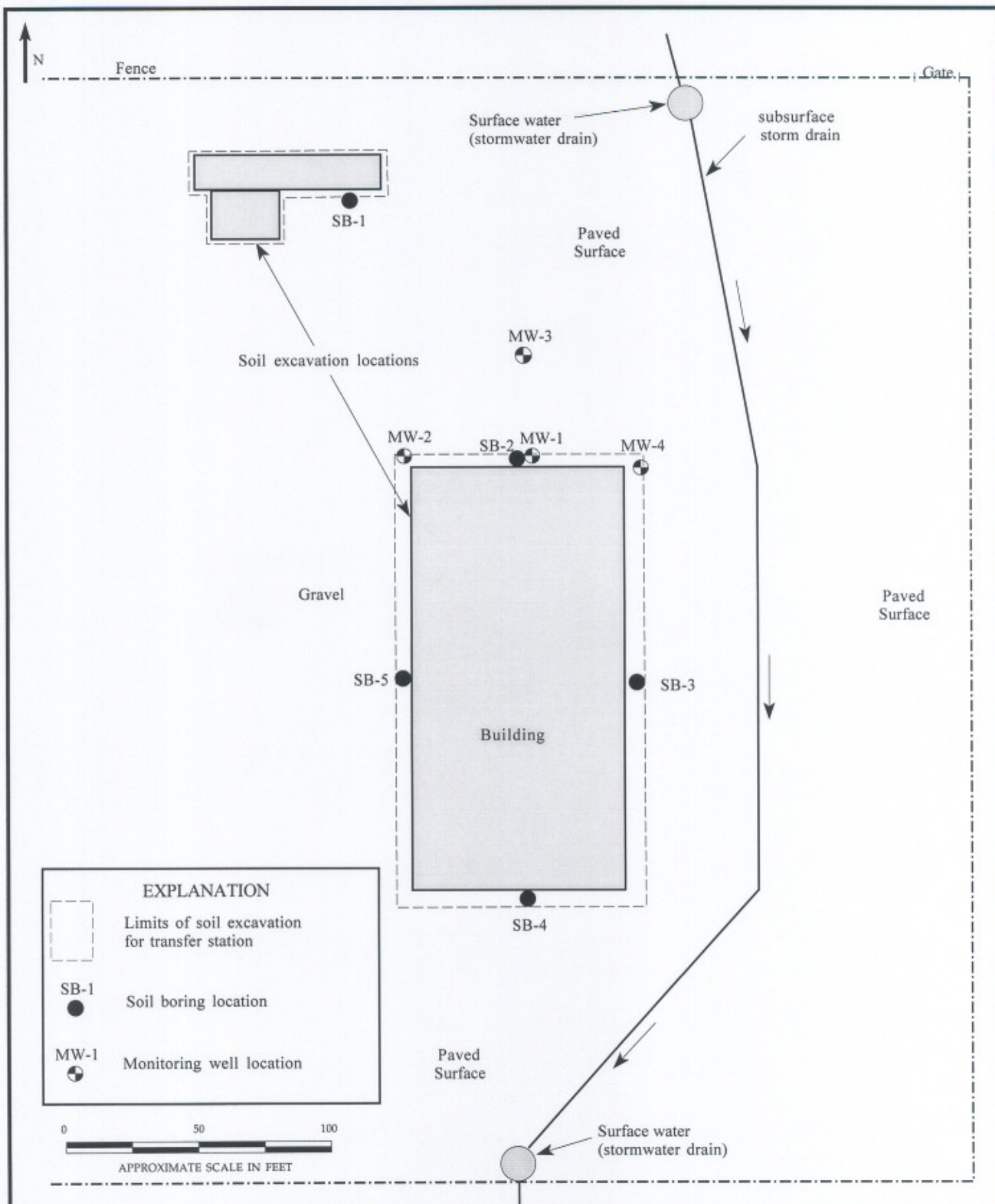


BLUE ROCK
ENVIRONMENTAL, INC.

Project No.
NC-1

Date
1/05

Figure
1



Site Plan

Former Beaver Lumber Company
1220 Fifth Street
Arcata, California

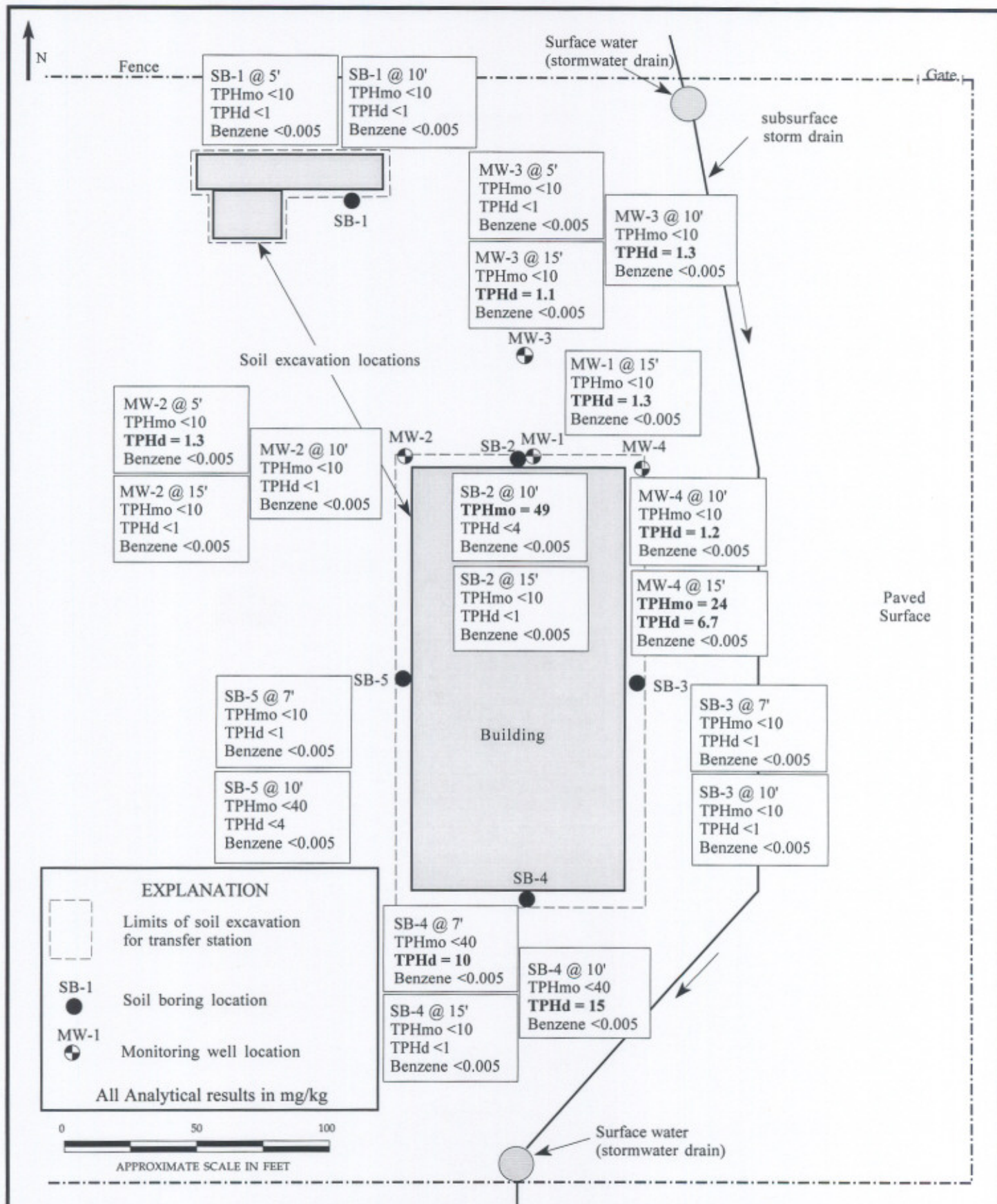


BLUE ROCK
ENVIRONMENTAL, INC.

Project No.
NC-1

Report Date
1/05

Figure
2



Sorbed-Phase Hydrocarbon Distribution Map

Former Beaver Lumber Company
1220 Fifth Street
Arcata, California

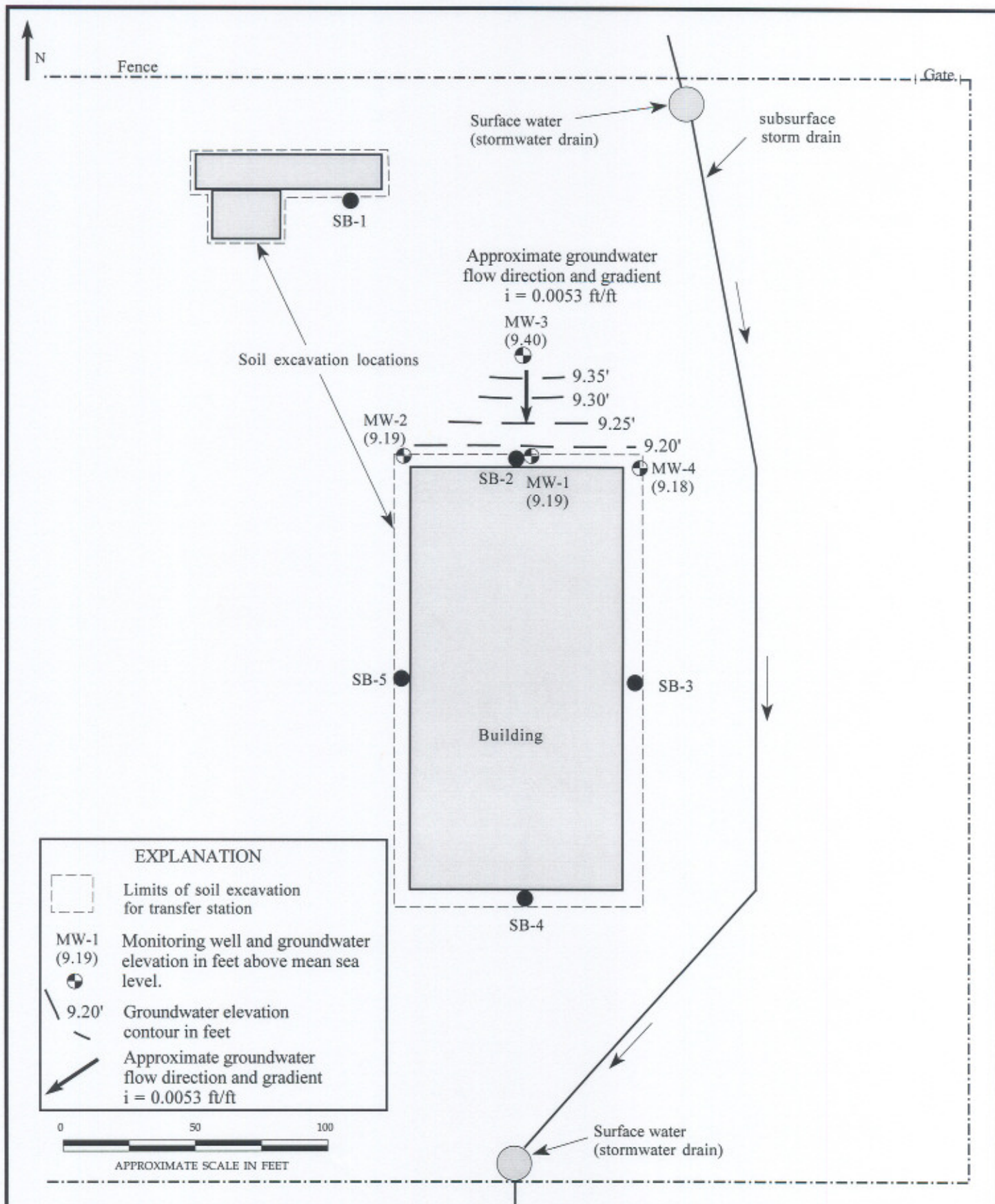


BLUE ROCK
ENVIRONMENTAL, INC.

Project No.
NC-1

Report Date
1/05

Figure
3



Groundwater Elevations and Gradient - 1/17/05

Former Beaver Lumber Company
1220 Fifth Street
Arcata, California

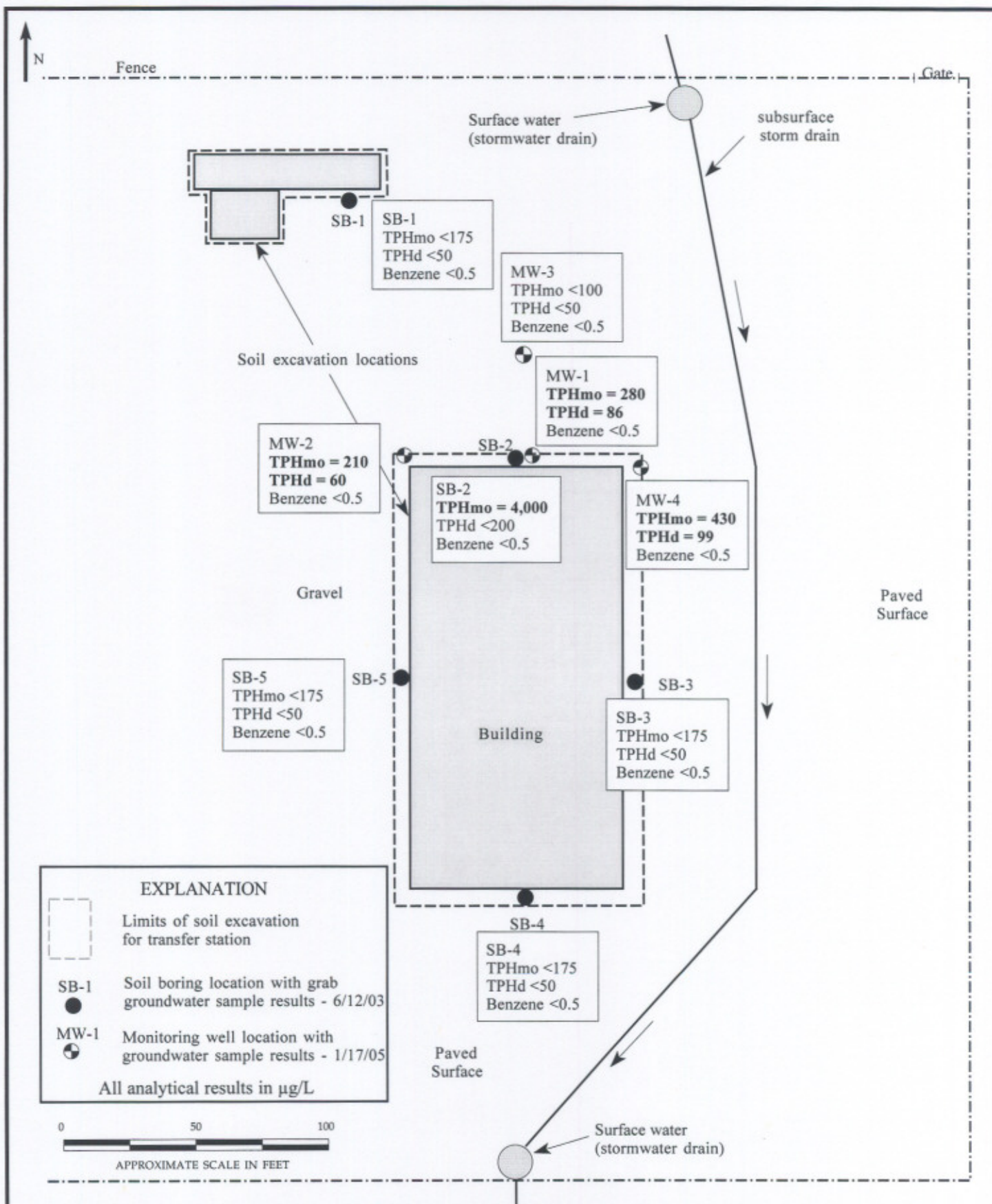


BLUE ROCK
ENVIRONMENTAL, INC.

Project No.
NC-1

Report Date
1/05

Figure
4



Dissolved-Phase Hydrocarbon Distribution

Former Beaver Lumber Company
1220 Fifth Street
Arcata, California



BLUE ROCK
ENVIRONMENTAL, INC.

Project No.
NC-1

Report Date
1/05


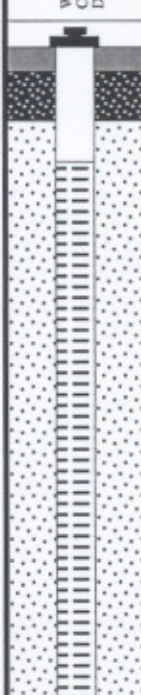




Figure
5

SOIL BORING AND WELL CONSTRUCTION LOG: MW-2

BLUE ROCK ENVIRONMENTAL, INC.

Page: 1 of 1



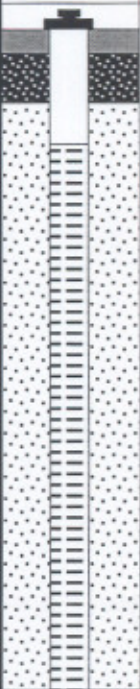




Project: NC-1

FIELD LOCATION OF BORING: 				DRILLING CONTRACTOR: MDE		BORING DIAMETER: 8 inches		CLIENT/LOCATION: Former Beaver Lumber Arcata, CA				
				DRILL RIG OPERATOR: Miguel		BORING DEPTH: 15 feet		SCREEN SLOT SIZE: 0.01 inches		DRILLING DATE: 1/10/05		
				DRILL RIG TYPE: CME 75		WELL DEPTH: 15 feet		WELL MATERIAL: 2-in. PVC		FILTER PACK: 2/12		
				WELL SEAL: Neat Cement over hydrated bentonite				PLANNED USE: Monitoring		LOGGED BY: Scott Ferriman		
WELL CONSTRUCTION DETAIL	WATER LEVEL	DEPTH (FEET)	SAMPLING		OVM READING (PPM)	GRAPHIC LOG OR USCS CODE	SAMPLING METHOD: Cal. Mod. Split-spoon		MONITORING INST: Thermo 580B PID		APPROVED BY: Brian Gwinn, RG	
			INTERVAL	RECOVERY			FIRST ENCOUNTERED WATER DEPTH: Approximately 6.5 feet		STATIC WATER DEPTH - DATE: 3.54 feet on 1/17/05			
		1					Asphalt					
		2					GRAVEL (GM); Gravel and sand fill material.					
		3										
		4										
		5	↓	↓	0.0		SILT (ML); gray, moist to wet, <10% fine grained sand.					
		6										
		7										
		8										
		9										
		10	↓	↓	0.0							
		11					Silty SAND (SM); gray, moist to wet, fine grained sand.					
		12										
		13										
		14	↓	↓	0.0							
		15	↓	↓	0.0							
		16										
17												
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SOIL BORING AND WELL CONSTRUCTION LOG: MW-3

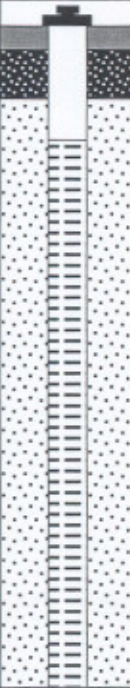
BLUE ROCK ENVIRONMENTAL, INC.

Page: 1 of 1
Project: NC-1


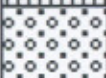
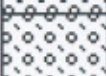


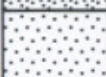







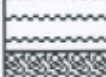
FIELD LOCATION OF BORING: MW-3 				DRILLING CONTRACTOR: MDE	BORING DIAMETER: 8 inches	CLIENT/LOCATION: Former Beaver Lumber Arcata, CA				
				DRILL RIG OPERATOR: Miguel	BORING DEPTH: 15 feet	SCREEN SLOT SIZE: 0.01 inches	DRILLING DATE: 1/10/05			
				DRILL RIG TYPE: CME 75	WELL DEPTH: 15 feet	WELL MATERIAL: 2-in. PVC	FILTER PACK: 2/12			
				WELL SEAL: Neat Cement over hydrated bentonite		PLANNED USE: Monitoring	LOGGED BY: Scott Ferriman			
WELL CONSTRUCTION DETAIL	WATER LEVEL	DEPTH (FEET)	SAMPLING		OVM READING (PPM)	GRAPHIC LOG OR USCS CODE	SAMPLING METHOD: Cal. Mod. Split-spoon	MONITORING INST: Thermo 580B PID	APPROVED BY: Brian Gwinn, RG	
			INTERVAL	RECOVERY			FIRST ENCOUNTERED WATER DEPTH: Approximately 12 feet	STATIC WATER DEPTH - DATE: 2.77 feet on 1/17/05		
		1					Asphalt			
		2					GRAVEL (GM); Gravel and sand fill material.			
		3					SILT (ML); gray, moist, no odor, <10% fine grained sand.			
		4								
		5	↓	↓	0.0					
		6								
		7								
		8								
		9								
		10	↓	↓	0.0					
		11								
		12				SILT (ML); gray, wet, no odor, <10% fine grained sand.				
		13								
		14								
		15	↓	↓	0.0		Silty SAND (SM); gray, wet, fine grained sand.			
		16								
		17								
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BLUE ROCK ENVIRONMENTAL, INC.

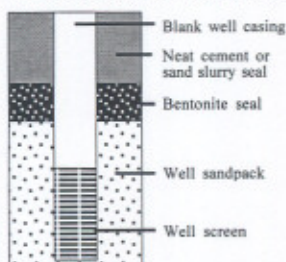
Project: NC-1

FIELD LOCATION OF BORING:						DRILLING CONTRACTOR:		BORING DIAMETER:		CLIENT/LOCATION:			
						MDE		8 inches		Former Beaver Lumber Arcata, CA			
						DRILL RIG OPERATOR:		BORING DEPTH:		SCREEN SLOT SIZE:			
						Miguel		15 feet		0.01 inches			
						DRILL RIG TYPE:		WELL DEPTH:		WELL MATERIAL:			
						CME 75		15 feet		2-in. PVC			
						WELL SEAL:				PLANNED USE:		LOGGED BY:	
						Neat Cement over hydrated bentonite				Monitoring		Scott Ferriman	
						SAMPLING METHOD:				MONITORING INST:		APPROVED BY:	
						Cal. Mod. Split-spoon				Thermo 580B PID		Brian Gwinn, RG	
						FIRST ENCOUNTERED WATER DEPTH:				STATIC WATER DEPTH - DATE:			
						Approximately 3 feet				4.62 feet on 1/17/05			
						GRAPHIC LOG OR USCS CODE		Asphalt					
						GRAVEL (GM); Gravel and sand fill material.							
						SILT (ML); gray, wet, no odor, <10% fine grained sand.							
						Silty SAND (SM); gray, wet, fine grained sand.							

UNIFIED SOIL CLASSIFICATION SYSTEM - VISUAL CLASSIFICATION OF SOILS (ASTM D-2488)

MAJOR DIVISIONS		GROUP SYMBOL	GROUP NAME		DESCRIPTION
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS		GW	Well-graded gravel Well-graded gravel with sand	Well-graded gravels or gravel-sand mixtures, little or no fines.
			GP	Poorly-graded gravel Poorly-graded gravel with sand	Poorly-graded gravels or gravel sand mixture, little or no fines.
			GM	Silty gravel Silty gravel with sand	Silty gravels, gravel-sand-silt mixtures.
			GC	Clayey gravel Clayey gravel with sand	Clayey gravels, gravel-sand-clay mixtures.
	SAND AND SANDY SOILS		SW	Well-graded sand Well-graded sand with gravel	Well-graded sands or gravelly sands, little or no fines.
			SP	Poorly-graded sand Poorly-graded sand with gravel	Poorly-graded sands or gravelly sands, little or no fines.
			SM	Silty sand Silty sand with gravel	Silty sands, sand-silt mixtures.
			SC	Clayey sand Clayey sand with gravel	Clayey sands, sand-clay mixtures.
FINE GRAINED SOILS	SILTS AND CLAYS		ML	Silt; Silt with sand; Silt with gravel Sandy silt; Sandy silt with gravel Gravelly silt; Gravelly silt with sand	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
			CL	Lean clay; Lean clay with sand; Lean clay with gravel Sandy lean clay; Sandy lean clay with gravel Gravelly lean clay; Gravelly lean clay with sand	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
	ELASTIC SILTS AND CLAYS		MH	Elastic silt; Elastic silt with sand; Elastic silt with gravel Sandy elastic silt; Sandy elastic silt with gravel Gravelly elastic silt; Gravelly elastic silt with sand	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Fat clay; Fat clay with sand; Fat clay with gravel Sandy fat clay; Sandy fat clay with gravel Gravelly fat clay; Gravelly fat clay with sand	Inorganic clays of high plasticity, fat clays.
HIGHLY ORGANIC SOILS			OL/OH	Organic soil; Organic soil with sand; Organic soil with gravel Sandy organic soil; Sandy organic soil with gravel Gravelly organic soil; Gravelly organic soil with sand	Organic silts and organic silt-clays of low plasticity. Organic clays of medium to high plasticity.
			Pt	Peat	Peat and other highly organic soils.

WELL CONSTRUCTION EXPLANATION



SOIL BORING NOTES:

Blow count represents the number of blows of a 140-lb hammer falling 30 inches per blow required to drive a sampler through the last 12 inches of an 18-inch penetration.

No warranty is provided as to the continuity of soil strata between borings. Logs represent the soil section observed at the boring location on the date of drilling only.

S = Sampler sank into medium under the weight of the hammer (no blow count)
P = Sampler was pushed into medium by drilling rig (no blow count)
NR = No Recovery

SANDS & GRAVELS	BLOWS/FT	SILTS & CLAYS	BLOWS/FT
VERY LOOSE	0 - 5	SOFT	0 - 5
LOOSE	5 - 12	FIRM	5 - 10
MED. DENSE	12 - 37	STIFF	10 - 20
DENSE	37 - 62	VERY STIFF	20 - 40
VERY DENSE	OVER 62	HARD	OVER 40

Approximate stabilized water level

Approximate first encountered water level

NOTE: all percentages of lithological composition presented on the soil boring logs are approximate. They represent the best estimates of a Blue Rock geologist based on visual inspection in the field.

SOIL BORING LOG AND WELL CONSTRUCTION DIAGRAM LEGEND

**BLUE ROCK
ENVIRONMENTAL, INC.**

GAUGING DATA/PURGE CALCULATIONS

Job No.: NC-1 Location: 1220 Fifth Street Date: 1/17/05 Tech(s): M. Richard

[illegible]

Explanation:

DIA. = Well Diameter

DTB = Depth to Bottom

DTW = Depth to Water

ST = Saturated Thickness (DTB-DTW)

CV = Casing Volume (ST x cf)

PV = Purge Volume (standard 3 x CV,
well development 10 x CV)

SPH = Thickness of Separate Phase Hydrocarbons

Conversion Factors (cf):

2 in. dia. well cf = 0.16 gal./ft.

4 in. dia. well cf = 0.65 gal./ft.

6 in. dia. well cf = 1.44 gal./ft.



BLUE ROCK
ENVIRONMENTAL, INC.

PURGING DATA

SHEET 1 OF 2

Job No.: NC-1 Location: 1220 Fifth Street Date: 11/11/05 Tech: M. Richard

Arcata

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH	
MW-1		0	---	---	---	Sample for: <u>TPHmo</u> 7-oxygenates
Calc. purge	13:25	21.00	1.23	55.0	6.57	TPHg <u>TPHd</u> <u>8260</u> <u>si-gel</u>
volume	14:00	28.75	0.80	52.3	6.86	<u>BTEX</u> MTBE 5-oxygenates
17:55	14:40	27.55	0.74	52.0	6.94	Purging Method:
						PVC bailer / Pump/Disposale Bailer
COMMENTS: color, turbidity, recharge, sheen, odor						Sampling Method:
gray / high turb / fast recharge / no sheen / no odor						Dedicated / Disposable bailer

Sample at: 14:45

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH	
MW-2		0	---	---	---	Sample for: <u>TPHmo</u> 7-oxygenates
Calc. purge	11:10	21.00	0.74	56.7	6.55	TPHg <u>TPHd</u> <u>8260</u> <u>si-gel</u>
volume	11:40	29.15	0.55	53.4	6.63	<u>BTEX</u> MTBE 5-oxygenates
18:34	12:10	28.34	0.49	52.5	6.73	Purging Method:
						PVC bailer/Pump/Disposale Bailer
COMMENTS: color, turbidity, recharge, sheen, odor						Sampling Method:
gray / high turb / fast recharge / no sheen / no odor						Dedicated / Disposable bailer

Sample at: 12:15

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH	
MW-3		0	---	---	---	Sample for: <u>TPHmo</u> 7-oxygenates
Calc. purge	12:30	21.00	1.54	55.5	6.51	<u>TPHg</u> <u>TPHd</u> <u>8260</u> <u>si-gel</u>
volume	13:00	210.00	1.08	61.2	6.29	<u>BTEX</u> MTBE 5-oxygenates
19:57	13:25	219.57	1.09	61.2	6.28	Purging Method:
						PVC bailer/Pump/Disposale Bailer
COMMENTS: color, turbidity, recharge, sheen, odor						Sampling Method:
gray / high turb / fast recharge / no sheen / no odor						Dedicated / Disposable bailer

Sample at: 13:30

PURGING DATA

SHEET 2 OF 2

Job No.: NC-1 Location: 1220 Fifth Street Date: 1/17/15 Tech: M. Richard
Arcata

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH	
mw-4		0	---	---	---	Sample for: TPHmo, 7-oxygenates
Calc. purge volume <u>16.61</u>	10:00	1.00	1.45	57.4	6.88	TPHg TPHd 8260
	10:20	8.30	1.22	56.2	7.03	BTEX MTBE 5-oxygenates
	10:55	16.61	1.12	55.9	7.10	
						Purging Method:
						PVC bailer / Pump/Disposable Bailer
COMMENTS: color, turbidity, recharge, sheen, odor						Sampling Method:
gray/high turb fast recharge no sheen no odor						Dedicated / Disposable bailer
						Sample at: 11:00

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH	
		0	---	---	---	Sample for: TPHmo 7-oxygenates
Calc. purge volume						TPHg TPHd 8260
						BTEX MTBE 5-oxygenates
						Purging Method:
						PVC bailer/Pump/Disposable Bailer
COMMENTS: color, turbidity, recharge, sheen, odor						Sampling Method:
						Dedicated / Disposable bailer
						Sample at:

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH	
		0	---	---	---	Sample for: TPHmo 7-oxygenates
Calc. purge volume						TPHg TPHd 8260
						BTEX MTBE 5-oxygenates
						Purging Method:
						PVC bailer/Pump/Disposable Bailer
COMMENTS: color, turbidity, recharge, sheen, odor						Sampling Method:
						Dedicated / Disposable bailer
						Sample at:



Report Number : 41922

Date : 01/21/2005

Scott Ferriman
Blue Rock Environmental, Inc.
535 3rd Street, Suite 100
Eureka, CA 95501

Subject : 9 Soil Samples
Project Name : Former Beaver Lumber
Project Number : NC-1

Dear Mr. Ferriman,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,


Joel Kiff



Report Number : 41922

Date : 01/21/2005

Subject : 9 Soil Samples
Project Name : Former Beaver Lumber
Project Number : NC-1

Case Narrative

Hydrocarbons reported as TPH as Diesel do not exhibit a typical Diesel chromatographic pattern for samples MW-3 @ 10', MW-3 @ 15', MW-4 @ 10', MW-4 @ 15' and MW-1 @ 15'. These hydrocarbons are higher boiling than typical diesel fuel.

Surrogate recovery for Method 8015, for samples MW-3 @ 10', MW-3 @ 15', MW-4 @ 10', MW-4 @ 15', MW-2 @ 10', MW-2 @ 15', and MW-1 @ 15' is below the control limits. This may be caused by the Silica Gel clean-up since the surrogate compound (1-chlorooctadecane) is slightly polar. Petroleum hydrocarbons are unaffected by Silica Gel clean-up.

Matrix Spike/Matrix Spike Duplicate Results associated with samples MW-3 @ 15', MW-4 @ 10', MW-3 @ 10', MW-3 @ 5', MW-2 @ 5', MW-4 @ 15', MW-2 @ 10', MW-1 @ 15', MW-2 @ 15' for the analytes Benzene, Toluene were outside of control limits. This may indicate a bias for the sample that was spiked. Since the LCS recoveries were within control limits, no data are flagged.

Approved By:

A handwritten signature in black ink, appearing to read "Joel Kiff".

Joel Kiff

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800



Report Number : 41922

Date : 01/21/2005

Project Name : **Former Beaver Lumber**Project Number : **NC-1**Sample : **MW-3 @ 5'**

Matrix : Soil

Lab Number : 41922-01

Sample Date :01/10/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Toluene - d8 (Surr)	99.3		% Recovery	EPA 8260B	01/14/2005
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	01/14/2005
TPH as Diesel (Silica Gel)	< 1.0	1.0	mg/Kg	M EPA 8015	01/19/2005
TPH as Motor Oil (Silica Gel)	< 10	10	mg/Kg	M EPA 8015	01/19/2005
1-Chlorooctadecane (Silica Gel Surr)	83.8		% Recovery	M EPA 8015	01/19/2005

Sample : **MW-3 @ 10'**

Matrix : Soil

Lab Number : 41922-02

Sample Date :01/10/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Toluene - d8 (Surr)	95.8		% Recovery	EPA 8260B	01/14/2005
4-Bromofluorobenzene (Surr)	91.0		% Recovery	EPA 8260B	01/14/2005
TPH as Diesel (Silica Gel)	1.3	1.0	mg/Kg	M EPA 8015	01/19/2005
TPH as Motor Oil (Silica Gel)	< 10	10	mg/Kg	M EPA 8015	01/19/2005
1-Chlorooctadecane (Silica Gel Surr)	64.6		% Recovery	M EPA 8015	01/19/2005

Approved By:

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



Report Number : 41922

Date : 01/21/2005

Project Name : **Former Beaver Lumber**Project Number : **NC-1**Sample : **MW-3 @ 15**

Matrix : Soil

Lab Number : 41922-03

Sample Date :01/10/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Toluene - d8 (Surr)	98.3		% Recovery	EPA 8260B	01/14/2005
4-Bromofluorobenzene (Surr)	94.6		% Recovery	EPA 8260B	01/14/2005
TPH as Diesel (Silica Gel)	1.1	1.0	mg/Kg	M EPA 8015	01/19/2005
TPH as Motor Oil (Silica Gel)	< 10	10	mg/Kg	M EPA 8015	01/19/2005
1-Chlorooctadecane (Silica Gel Surr)	65.6		% Recovery	M EPA 8015	01/19/2005

Sample : **MW-4 @ 10'**

Matrix : Soil

Lab Number : 41922-04

Sample Date :01/10/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Toluene - d8 (Surr)	99.0		% Recovery	EPA 8260B	01/14/2005
4-Bromofluorobenzene (Surr)	99.5		% Recovery	EPA 8260B	01/14/2005
TPH as Diesel (Silica Gel)	1.2	1.0	mg/Kg	M EPA 8015	01/19/2005
TPH as Motor Oil (Silica Gel)	< 10	10	mg/Kg	M EPA 8015	01/19/2005
1-Chlorooctadecane (Silica Gel Surr)	62.1		% Recovery	M EPA 8015	01/19/2005

Approved By:

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



Report Number : 41922

Date : 01/21/2005

Project Name : **Former Beaver Lumber**Project Number : **NC-1**Sample : **MW-4 @ 15'**

Matrix : Soil

Lab Number : 41922-05

Sample Date :01/10/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	01/14/2005
4-Bromofluorobenzene (Surr)	97.4		% Recovery	EPA 8260B	01/14/2005
TPH as Diesel (Silica Gel)	6.7	1.0	mg/Kg	M EPA 8015	01/19/2005
TPH as Motor Oil (Silica Gel)	24	10	mg/Kg	M EPA 8015	01/19/2005
1-Chlorooctadecane (Silica Gel Surr)	64.6		% Recovery	M EPA 8015	01/19/2005

Sample : **MW-2 @ 5'**

Matrix : Soil

Lab Number : 41922-06

Sample Date :01/10/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Toluene - d8 (Surr)	99.6		% Recovery	EPA 8260B	01/14/2005
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	01/14/2005
TPH as Diesel (Silica Gel)	1.3	1.0	mg/Kg	M EPA 8015	01/18/2005
TPH as Motor Oil (Silica Gel)	< 10	10	mg/Kg	M EPA 8015	01/18/2005
1-Chlorooctadecane (Silica Gel Surr)	87.0		% Recovery	M EPA 8015	01/18/2005

Approved By:

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



Report Number : 41922

Date : 01/21/2005

Project Name : **Former Beaver Lumber**Project Number : **NC-1**Sample : **MW-2 @ 10'**

Matrix : Soil

Lab Number : 41922-07

Sample Date :01/10/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Toluene - d8 (Surr)	99.1		% Recovery	EPA 8260B	01/14/2005
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	01/14/2005
TPH as Diesel (Silica Gel)	< 1.0	1.0	mg/Kg	M EPA 8015	01/19/2005
TPH as Motor Oil (Silica Gel)	< 10	10	mg/Kg	M EPA 8015	01/19/2005
1-Chlorooctadecane (Silica Gel Surr)	67.6		% Recovery	M EPA 8015	01/19/2005

Sample : **MW-2 @ 15'**

Matrix : Soil

Lab Number : 41922-08

Sample Date :01/10/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Toluene - d8 (Surr)	99.7		% Recovery	EPA 8260B	01/14/2005
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	01/14/2005
TPH as Diesel (Silica Gel)	< 1.0	1.0	mg/Kg	M EPA 8015	01/19/2005
TPH as Motor Oil (Silica Gel)	< 10	10	mg/Kg	M EPA 8015	01/19/2005
1-Chlorooctadecane (Silica Gel Surr)	67.1		% Recovery	M EPA 8015	01/19/2005

Approved By:

Jed Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



Report Number : 41922

Date : 01/21/2005

Project Name : **Former Beaver Lumber**

Project Number : **NC-1**

Sample : **MW-1 @ 15'**

Matrix : Soil

Lab Number : 41922-09

Sample Date :01/10/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Toluene - d8 (Surr)	99.1		% Recovery	EPA 8260B	01/14/2005
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	01/14/2005
TPH as Diesel (Silica Gel)	1.3	1.0	mg/Kg	M EPA 8015	01/19/2005
TPH as Motor Oil (Silica Gel)	< 10	10	mg/Kg	M EPA 8015	01/19/2005
1-Chlorooctadecane (Silica Gel Surr)	60.4		% Recovery	M EPA 8015	01/19/2005

Approved By:

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

QC Report : Method Blank DataProject Name : **Former Beaver Lumber**Project Number : **NC-1**

Report Number : 41922

Date : 01/21/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel (Silica Gel)	< 1.0	1.0	mg/Kg	M EPA 8015	01/18/2005
TPH as Motor Oil (Silica Gel)	< 10	10	mg/Kg	M EPA 8015	01/18/2005
1-Chlorooctadecane (Silica Gel Surr)	90.6		%	M EPA 8015	01/18/2005
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	01/14/2005
Toluene - d8 (Surr)	96.2		%	EPA 8260B	01/14/2005
4-Bromofluorobenzene (Surr)	89.4		%	EPA 8260B	01/14/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
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KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Approved By: Joel Kiff



QC Report : Matrix Spike/ Matrix Spike Duplicate

Report Number : 41922

Date : 01/21/2005

Project Name : **Former Beaver Lumber**

Project Number : **NC-1**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
TPH as Diesel	41922-06	1.3	20.0	20.0	17.7	16.8	mg/Kg	M EPA 8015	1/18/05	83.0	78.8	5.23	60-140	25
Benzene	41922-02	<0.0050	0.0393	0.0393	0.0262	0.0246	mg/Kg	EPA 8260B	1/14/05	66.7	62.6	6.41	70-130	25
Toluene	41922-02	<0.0050	0.0393	0.0393	0.0239	0.0224	mg/Kg	EPA 8260B	1/14/05	60.9	57.0	6.64	70-130	25
Methyl-t-Butyl Ether	41922-02	<0.0050	0.0393	0.0393	0.0358	0.0348	mg/Kg	EPA 8260B	1/14/05	91.0	88.7	2.62	70-130	25

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Approved By:  Joel Kiff

QC Report : Laboratory Control Sample (LCS)

Report Number : 41922

Date : 01/21/2005

Project Name : **Former Beaver Lumber**

Project Number : **NC-1**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
TPH as Diesel	20.0	mg/Kg	M EPA 8015	1/18/05	81.8	70-130
Benzene	0.0389	mg/Kg	EPA 8260B	1/14/05	81.5	70-130
Toluene	0.0389	mg/Kg	EPA 8260B	1/14/05	86.1	70-130
Methyl-t-Butyl Ether	0.0389	mg/Kg	EPA 8260B	1/14/05	101	70-130

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Approved By:

Joel Kiff





2795 2nd Street, Suite 300
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4808

Lab No. 41922

Page 1 of 2

Project Contact (Hardcopy or PDF To): <u>Scott Ferriman</u>		California EDF Report? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Chain-of-Custody Record and Analysis Request																									
Company/Address: <u>Blue Rock Env. Europe</u>		Recommended but not mandatory to complete this section: Sampling Company Log Code:		Analysis Request																									
Phone No.: <u>707-441-1934</u>	FAX No.: <u>707-441-1949</u>	Global ID:		Analysis Request																									
Project Number: <u>NC-1</u>	P.O. No:	EDF Deliverable To (Email Address):																											
Project Name: <u>Former Beaver Lumber</u>		Sampler Signature: <u>[Signature]</u>		TAT																									
Project Address: <u>1220 5th Street Arcata, CA</u>		Sampler Signature:																											
Sample Designation		Sampling		Container		Preservative				Matrix		For Lab Use Only																	
		Date	Time	40 ml VOA	SLEEVE		HCl	HNO ₃	ICE	NONE	WATER	SOIL	BTEX (8260B)	BTEX/TPH Gas/MTBE (8021B/M8015)	TPH as Diesel (M8015)	TPH as Motor Oil (M8015)	TPH Gas/BTEX/MTBE (8260B)	5 Oxygenates/TPH Gas/BTEX (8260B)	7 Oxygenates/TPH Gas/BTEX (8260B)	5 Oxygenates (8260B)	7 Oxygenates (8260B)	Lead Scav. (1,2 DCA & 1,2 EDB - 8260B)	EPA 8260B (Full List)	Volatile Halocarbons (EPA 8260B)	Lead (7421/239.2)	TOTAL (X) W.E.T. (X)	12 hr/24 hr/48 hr/72 hr/1 wk		
MW-3 @ 5'		11/10/05	825	1				X				X	X	X	X													X	01
MW-3 @ 10'			835	1				X				X	X	X	X													X	02
MW-3 @ 15'			845	1				X				X	X	X	X													X	03
MW-4 @ 10'			1000	1				X				X	X	X	X													X	04
MW-4 @ 15'			1015	1				X				X	X	X	X													X	05
MW-2 @ 5'			1115	1				X				X	X	X	X													X	06
MW-2 @ 10'			1120	1				X				X	X	X	X													X	07
MW-2 @ 15'			11:30	1				X				X	X	X	X													X	08
MW-1 @ 10'			12:15	1				X				X	X	X	X													X	
MW-1 @ 15'			12:25	1				X				X	X	X	X													X	09
Relinquished by: <u>[Signature]</u>		Date <u>11/10/05</u>	Time	Received by: <u>Fed Ex</u>		Remarks: <u>SAMPLES ARRIVED VIA FEDEX ON WET ICE AT 1250. TEMPERATURES WERE 4.5°C VIA IR-1. REP 01/20/05 1200</u>																							
Relinquished by:		Date	Time	Received by:																									
Relinquished by:		Date	Time	Received by Laboratory:																									
		<u>01/20/05</u>	<u>1200</u>	<u>Robert C. Pottle KIFF ANALYTICAL</u>		Bill to:																							



Report Number : 42004

Date : 1/26/2005

Scott Ferriman
Blue Rock Environmental, Inc.
535 3rd Street, Suite 100
Eureka, CA 95501

Subject : 4 Water Samples
Project Name : Former Beaver Lumber
Project Number : NC-1

Dear Mr. Ferriman,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,


Joel Kiff



Report Number : 42004

Date : 1/26/2005

Subject : 4 Water Samples
Project Name : Former Beaver Lumber
Project Number : NC-1

Case Narrative

Hydrocarbons reported as TPH as Diesel do not exhibit a typical Diesel chromatographic pattern for samples MW-1, MW-2 and MW-4. These hydrocarbons are higher boiling than typical diesel fuel.

Approved By:

A handwritten signature in black ink, appearing to read "Jdel Kiff", is written over the printed name.

Jdel Kiff

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800



Report Number : 42004

Date : 1/26/2005

Project Name : **Former Beaver Lumber**Project Number : **NC-1**Sample : **MW-1**

Matrix : Water

Lab Number : 42004-01

Sample Date :1/17/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	1/20/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	1/20/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	1/20/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	1/20/2005
Toluene - d8 (Surr)	97.0		% Recovery	EPA 8260B	1/20/2005
4-Bromofluorobenzene (Surr)	94.1		% Recovery	EPA 8260B	1/20/2005
TPH as Diesel (w/ Silica Gel)	86	50	ug/L	M EPA 8015	1/26/2005
TPH as Motor Oil (w/ Silica Gel)	280	100	ug/L	M EPA 8015	1/26/2005

Sample : **MW-2**

Matrix : Water

Lab Number : 42004-02

Sample Date :1/17/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	1/21/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	1/21/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	1/21/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	1/21/2005
Toluene - d8 (Surr)	95.9		% Recovery	EPA 8260B	1/21/2005
4-Bromofluorobenzene (Surr)	97.3		% Recovery	EPA 8260B	1/21/2005
TPH as Diesel (w/ Silica Gel)	60	50	ug/L	M EPA 8015	1/26/2005
TPH as Motor Oil (w/ Silica Gel)	210	100	ug/L	M EPA 8015	1/26/2005

Approved By:

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



Report Number : 42004

Date : 1/26/2005

Project Name : **Former Beaver Lumber**Project Number : **NC-1**Sample : **MW-3**

Matrix : Water

Lab Number : 42004-03

Sample Date :1/17/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	1/21/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	1/21/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	1/21/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	1/21/2005
Toluene - d8 (Surr)	97.0		% Recovery	EPA 8260B	1/21/2005
4-Bromofluorobenzene (Surr)	95.7		% Recovery	EPA 8260B	1/21/2005
TPH as Diesel (w/ Silica Gel)	< 50	50	ug/L	M EPA 8015	1/26/2005
TPH as Motor Oil (w/ Silica Gel)	< 100	100	ug/L	M EPA 8015	1/26/2005

Sample : **MW-4**

Matrix : Water

Lab Number : 42004-04

Sample Date :1/17/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	1/21/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	1/21/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	1/21/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	1/21/2005
Toluene - d8 (Surr)	95.5		% Recovery	EPA 8260B	1/21/2005
4-Bromofluorobenzene (Surr)	95.0		% Recovery	EPA 8260B	1/21/2005
TPH as Diesel (w/ Silica Gel)	99	50	ug/L	M EPA 8015	1/26/2005
TPH as Motor Oil (w/ Silica Gel)	430	100	ug/L	M EPA 8015	1/26/2005

Approved By:

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

Report Number : 42004

Date : 1/26/2005

QC Report : Method Blank Data

Project Name : **Former Beaver Lumber**

Project Number : **NC-1**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel (w/ Silica Gel)	< 50	50	ug/L	M EPA 8015	1/20/2005
TPH as Motor Oil (w/ Silica Gel)	< 100	100	ug/L	M EPA 8015	1/20/2005
Benzene	< 0.50	0.50	ug/L	EPA 8260B	1/20/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	1/20/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	1/20/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	1/20/2005
Toluene - d8 (Surr)	95.8		%	EPA 8260B	1/20/2005
4-Bromofluorobenzene (Surr)	95.9		%	EPA 8260B	1/20/2005
Benzene	< 0.50	0.50	ug/L	EPA 8260B	1/20/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	1/20/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	1/20/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	1/20/2005
Toluene - d8 (Surr)	95.4		%	EPA 8260B	1/20/2005
4-Bromofluorobenzene (Surr)	96.4		%	EPA 8260B	1/20/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
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KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Approved By:  Joel Kiff

QC Report : Matrix Spike/ Matrix Spike Duplicate

Report Number : 42004

Date : 1/26/2005

Project Name : **Former Beaver Lumber**

Project Number : **NC-1**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
TPH as Diesel	Blank	<50	1000	1000	962	1020	ug/L	M EPA 8015	1/20/05	96.2	102	5.64	70-130	25
Benzene	42004-01	<0.50	40.0	40.0	40.0	39.6	ug/L	EPA 8260B	1/20/05	100	99.0	1.00	70-130	25
Toluene	42004-01	<0.50	40.0	40.0	38.0	37.0	ug/L	EPA 8260B	1/20/05	95.0	92.6	2.66	70-130	25
Benzene	42008-06	<0.50	40.0	40.0	39.9	39.2	ug/L	EPA 8260B	1/20/05	99.9	98.0	1.83	70-130	25
Toluene	42008-06	<0.50	40.0	40.0	38.1	36.6	ug/L	EPA 8260B	1/20/05	95.4	91.4	4.19	70-130	25

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Approved By:  Joel Kiff

QC Report : Laboratory Control Sample (LCS)

Report Number : 42004

Date : 1/26/2005

Project Name : **Former Beaver Lumber**

Project Number : **NC-1**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	1/20/05	102	70-130
Toluene	40.0	ug/L	EPA 8260B	1/20/05	95.5	70-130
Benzene	40.0	ug/L	EPA 8260B	1/20/05	97.8	70-130
Toluene	40.0	ug/L	EPA 8260B	1/20/05	97.1	70-130

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Approved By:

Joel Kiff



